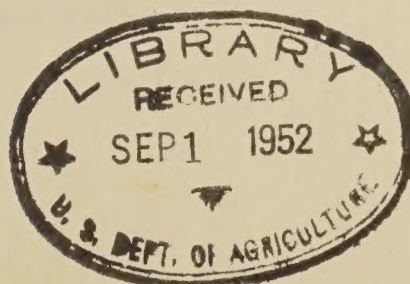


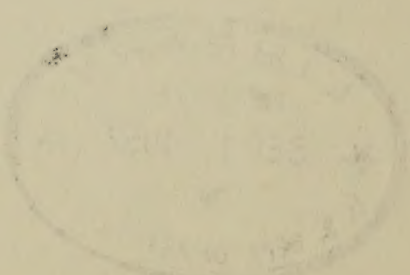
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POWER REQUIREMENT STUDY,
GLADES ELECTRIC COOPERATIVE, INC.
(FLORIDA 35 GLADES)
(Revised)

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X✓
U.S. PREPARED BY
PROGRAM ANALYST
OFFICE OF THE ADMINISTRATOR
RURAL ELECTRIFICATION ADMINISTRATION.
August 1952



THE UNIVERSITY OF
THE STATE OF NEW YORK
THE STATE OF NEW YORK
THE STATE OF NEW YORK

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POWER REQUIREMENT STUDY 1/

FLORIDA 35 GLADES

(Revised)

Foreword

The study has been prepared by the Rural Electrification Administration for use in determining the present and estimated future power requirements of the Glades Electric Cooperative, Inc. (Florida 35 Glades).

The estimates of future loads contained in the study have been arrived at from a field survey in the Cooperative's area and from basic data obtained in the Cooperative's office. The estimates of kwh consumption for farm, nonfarm and town residential consumers used herein are based upon a projection of historical trends in consumption, type of farm, income, competitive sources of energy, and other economic factors which are believed to have a bearing on the future use of electricity in this area.

The estimates of average unit kilowatt demands per consumer at peak load, corresponding to the estimated average kilowatt-hour consumption per member per month of farm, nonfarm and small commercial consumers, have been derived from the curve "Maximum Demand at Substation" accompanying Engineering Memorandum No. 94R5 of the Engineering Division, REA, dated August 21, 1950. The total number of consumers to be served in each substation area, rather than the number of consumers in a particular class, was used as a basis in arriving at the total and unit demands in order to reflect the probable overall diversity between classes of consumers in a given substation area. No adjustment for a power factor less than unity was applied, it being assumed for estimating purposes that the KVA demand as read from the curve was equal to the KW demand at the substation.

Summary and Conclusions

Pertinent information reflecting the data and conclusions arrived at regarding the present and future number of consumers, kilowatt-hour requirements, and kilowatt demands for the Glades Electric Cooperative, Inc. (Florida 35 Glades) are included in the attached Tables I to VII, inclusive.

Table VII (Summary of Power Requirements) indicates that approximately 826 consumers will be served by the Cooperative in 1954, 994 in 1957, and 1,253 in 1962, at an estimated maximum demand at substation of 2,924 kilowatts in 1954, 4,684 kilowatts in 1957, and 6,643 kilowatts in 1962. Likewise, it is estimated that the Cooperative's annual energy requirements at substations will approximate 8.3 million kilowatt-hours in 1954, 12.1 million kilowatt-hours in 1957, and 17.2 million kilowatt-hours in 1962.

1/ Based on a field survey conducted by K. O. Peters, Engineer, Office of the Administrator, REA, USDA.

The degree of attainment of area coverage by the Cooperative, as well as the achievement of the estimated kilowatt-hour consumption foreseen in this report, are contingent on the following important considerations:

1. An adequate, dependable source of low-cost power supply.
2. Dependable, adequate electrical power to the ultimate consumer with a minimum of interruption in service and at the lowest retail rate commensurate with "pay out" considerations.
3. A fully prosecuted power use program designed to attain the goals of saturation of appliances and farm equipment reflected by the estimates included in this report.

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E. C. Weitzell,
Program Analyst

TABLE 1

COMPARATIVE ANNUAL OPERATING DATA OF CONSUMERS AND AVERAGE MONTHLY CONSUMPTION

FLORIDA 35 GRADES (REV.)

YEAR	FARM			NONFARM RESIDENTIAL			SMALL COMMERCIAL			LARGE COMMERCIAL			CITY OF MOORE HAVEN			TOTAL		
	MEMBERS NO.	AVERAGE KWH/MO. % INCR.	MEMBERS NO.	AVERAGE KWH/MO. % INCR.	MEMBERS NO.	AVERAGE KWH/MO. % INCR.	MEMBERS NO.	AVERAGE KWH/MO. % INCR.	MEMBERS NO.	AVERAGE KWH/MO. % INCR.	MEMBERS NO.	AVERAGE KWH/MO. % INCR.	MEMBERS NO.	AVERAGE KWH/MO. % INCR.	MEMBERS NO.	AVERAGE KWH/MO. % INCR.	MEMBERS NO.	AVERAGE KWH/MO. % INCR.
1947	192	59	--	--	26	351	--	2	7,649	--	1	52,784	--	222	387	--		
1948	365	82	39.0	11	37	425	21.1	3	28,875	277.5	1	64,417	22.0	415	467	20.7		
1949	433	107	30.5	11	50	441	3.8	6	32,067	11.1	1	60,701	-5.8	503	617	32.1		
1950	510	135	26.2	13	57	379	-14.1	8	22,820	-28.8	1	64,633	6.5	589	577	-6.5		
1951	572	158	17.0	13	61	496	30.9	8	28,108	23.2	1	61,677	-4.6	655	615	6.6		
1952 1/	614	185	--	13	61	572	--	9	18,430	--	1	70,766	--	698	530	--		
SUM OF YEARLY % INCR. (1947 - 1951)		112.7			83.9		41.7		283.0			18.1		52.9				
AVERAGE PER YEAR		28.2			28.0		10.4		70.8			4.5		13.2				

1/ SIX MONTHS ONLY.

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ADMINISTRATOR, REA - AUG. 1952

TABLE II

COMPARATIVE ANNUAL OPERATING DATA ON ENERGY REQUIREMENTS

FLORIDA 35 GLADES (REV.)												
YEAR	ENERGY PURCHASED		ENERGY SOLD		ENERGY LOSSES		MAXIMUM KW DEMAND	AVERAGE COST PER KWH	TOTAL MILES ENERGIZED	TOTAL SERVICES CONNECTED	OVERALL CONSUMER DENSITY	
	KWH	% INCR.	KWH	% INCR.	KWH	% LOSS						
1947	1,053,492	---	1,028,884	---	24,608	2.3	355	\$.02233	133	260	1.95	
1948	2,552,634	142.3	2,326,745	126.1	225,889	8.8	1,300	.01498	250	461	1.84	
1949	4,236,826	66.0	3,727,686	60.2	509,140	12.0	1,400	.01066	250	564	2.26	
1950	4,612,830	8.9	4,073,126	9.3	539,704	11.7	*	.00953	342	618	1.81	
1951	5,518,035	19.6	4,836,242	18.7	681,793	12.4	*	.00996	356	672	1.89	
1952 I/	2,576,012	---	2,221,543	---	354,469	13.8	*	.01027	367	702	1.91	
SUM OF YEARLY % INCR.												
(1947 - 1951)												
AVERAGE PER YEAR												
236.8												
59.2												
11.4												

TABLE III

ESTIMATE OF LOADS - MOORE HAVEN SUBSTATION AREA *

FLORIDA 35 GLADES (REV.)	NUMBER OF CONSUMERS			KW DEMAND			ANNUAL KWH REQUIREMENTS		
	1954	1957	1962	1954	1957	1962	1954	1957	1962
TYPE OF CONSUMER									
FARM	425	506	645	@0.849	@0.985	@1.213	@2700	@3300	@4200
SMALL COMMERCIAL	43	50	60	@1.956	@2.084	@2.402	1,147,500	1,669,800	2,709,000
PUBLIC BUILDINGS	8	9	9	@0.183	@0.263	@0.352	@6840	@7500	@8700
ARCHIBALD IRRIGATION	1	1	1	@15/1.5DF	@15/1.5DF	@15/1.5DF	294,120	375,000	522,000
ARCHIBALD EXPEDITION	1	1	1	@70/1.5DF	@70/1.5DF	@70/1.5DF	@480	@720	@960
LAND-O-SUN (CREAMERY)	1	1	1	@23/2.0DF	@23/2.0DF	@23/2.0DF	3,810	6,480	8,640
SHAWNEE FARM SHOPS	1	1	1	@50/2.5DF	@50/2.5DF	@50/2.5DF	3,000	3,000	3,000
SHAWNEE PACKING SHED	1	1	1	@50/3.0DF	@50/3.0DF	@50/3.0DF	154,000	154,000	154,000
SHAWNEE FARM DRAINAGE	1	1	1	@9/2.0DF	@9/2.0DF	@9/2.0DF	9,600	9,800	10,200
U. S. SUGAR FEEDMILL	1	1	1	@330/1.25DF	@365/1.25DF	@490/1.25DF	62,000	62,000	62,000
CITY OF MOORE HAVEN	1	1	1	@50/1.5DF	@50/1.5DF	@50/1.5DF	50,000	50,000	50,000
J. F. SMOAK	1	1	1	@50/1.5DF	@50/1.5DF	@50/1.5DF	15,000	15,000	15,000
SUB-TOTAL	485	574	723	888	1,073	1,498	2,639,060	3,370,080	4,958,840

* INDICATED AS SIX MONTHS LOAD - INCLUDES:
CITY OF CLEWISTON, U.S. SUGAR CORP., AND
RAMSEY FIBER PLANT. U. S. SUGAR CORP.
LOAD NOT SHOWN ON THIS TABULATION (TABLE IV)
NOTE: CONT'D. ON NEXT PAGE.

PROGRAM ANALYST, OFFICE OF THE
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TABLE III (CONT'D.)

ESTIMATE OF LOADS - MOORE HAVEN SUBSTATION AREA *

FLORIDA 35 GRADES (REV.)	NUMBER OF CONSUMERS			KW DEMAND			ANNUAL KWH REQUIREMENTS		
	1954	1957	1962	1954	1957	1962	1954	1957	1962
TYPE OF CONSUMER									
MAXLEY SECURITIES (HAY DRYER)	1	1	1	@18/1.2DF 15	@18/1.2DF 15	@18/1.2DF 15	12,000	12,000	12,000
BEASLEY	1	1	1	@7/1.5DF 5	@7/1.5DF 5	@7/1.5DF 5	6,600	6,600	6,600
R. R. CHRISTIAN	1	1	1	@15/1.5DF 10	@15/1.5DF 10	@15/1.5DF 10	6,600	6,600	6,600
DICKERSON	1	1	1	@7/1.5DF 5	@7/1.5DF 5	@7/1.5DF 5	4,200	4,200	4,200
LARGE COMMERCIAL (POTENTIAL):									
IRRIGATION	2	7	9	@50/1.5DF 67	@50/1.5DF 233	@50/1.5DF 300	@20,000 40,000	@20,000 140,000	@20,000 180,000
IRRIGATION	3	7	11	@15/1.5DF 30	@15/1.5DF 70	@15/1.5DF 110	@7500 22,500	@7500 52,500	@7500 82,500
FLORIDA CONSERVATION SCHOOL	1	1	1	@40/2.5DF 16	@40/2.5DF 16	@40/2.5DF 16	72,000	72,000	72,000
U. S. SUGAR CANE HOISTS (6 MO.)	3	3	3	@70/1.2DF 175	@70/1.2DF 175	@70/1.2DF 175	@36,000 108,000	@36,000 108,000	@36,000 108,000
MOORE HAVEN ICE PLANT (6 MO.)	--	1	1	--	@150/1.2DF 114	@150/1.2DF 114	--	600,000	600,000
DISSTON ISLAND (DRAINAGE)	--	1	1	--	@250/1.5DF 167	@250/1.5DF 167	--	100,000	100,000
SUB-TOTAL							2,910,960	4,471,980	6,130,740
PLUS DIST. LOSSES (APPROX.)							@17% 596,040	@17% 916,020	@16% 1,167,260
TOTAL	498	598	753	1,211	1,883	2,415	3,507,000	5,388,000	7,298,000

* U. S. SUGAR CORP. LOAD NOT SHOWN ON THIS
TABULATION (SEE TABLE IV)

ANNUAL LOAD FACTOR -

33.1%

32.7%

34.5%

PROGRAM ANALYST, OFFICE OF THE
ADMINISTRATOR, REA - AUG. 1952

TABLE IV

ESTIMATE OF LOADS - MOORE HAVEN SUBSTATION AREA *

FLORIDA 35 GLADES (REV.)

TYPE OF CONSUMER	NUMBER OF CONSUMERS			KW DEMAND			ANNUAL KWH REQUIREMENTS		
	1954	1957	1962	1954	1957	1962	1954	1957	1962
U.S. SUGAR CORP. *	1	1	1	1,325	1,825	2,700	3,250,000	4,320,000	6,210,000
SUB-TOTAL							3,250,000	4,320,000	6,210,000
PLUS DIST. LOSSES (APPROX.)							245,000 @7%	276,000 @6%	403,000 @6%
TOTAL	1	1	1	1,325	1,825	2,700	3,495,000	4,596,000	6,613,000

* INDICATED AS SIX MONTHS LOAD. CITY OF CLEWISTON,
U.S. SUGAR CORPORATION, AND RAMEY FIBER PLANT.

ANNUAL LOAD FACTOR - 30.1% 28.7% 28.0%

PROGRAM ANALYST, OFFICE OF THE
ADMINISTRATOR, REA - AUGUST 1952

TABLE V

ESTIMATE OF LOADS - LAKE ANNIE SUBSTATION AREA

FLORIDA 35 GLADES (REV.)	NUMBER OF CONSUMERS			KW DEMAND			ANNUAL KWH REQUIREMENTS			
	1954	1957	1962	1954	1957	1962	1954	1957	1962	
TYPE OF CONSUMER										
FARM	284	338	430	@0.891	@1.035	@1.244	@2700	@3300	@4200	
				253	350	535	766,800	1,115,400	1,806,000	
SMALL COMMERCIAL	31	35	40	@2.054	@2.190	@2.463	@6840	@7500	@8700	
				64	77	99	212,040	262,500	348,000	
PUBLIC BUILDINGS	6	7	7	@0.193	@0.277	@0.361	@480	@720	@960	
				1	2	3	2,880	5,040	6,720	
LARGE COMMERCIAL:				@10/1.5DF	@10/1.5DF	@10/1.5DF				
DURRANCE RANCH	1	1	1	7	7	7	22,000	24,000	24,000	
TOPE PACKING SHED	1	1	1	@22/4.0DF	@22/4.0DF	@22/4.0DF	10,000	10,000	10,000	
				5	5	5				
MARKAL, REYNOLDS & SMITH	1	1	1	@20/4.0DF	@20/4.0DF	@20/4.0DF	16,800	16,800	16,800	
				5	5	5				
LARGE COMMERCIAL (POTENTIAL):				@50/1.5DF	@50/1.5DF	@50/1.5DF	@20,000	@20,000	@20,000	
IRRIGATION	1	3	5	33	100	167	20,000	60,000	100,000	
IRRIGATION	1	3	4	@15/1.5DF	@15/1.5DF	@15/1.5DF	@7500	@7500	@7500	
				20	30	40	15,000	22,500	30,000	
NAVAL STORES		6	10	@100/1.5DF	@100/1.5DF	@100/1.5DF		@50,000	@50,000	
(ORANGE GROVE IRRIGATION)				--	400	667	--	300,000	500,000	
SUB-TOTAL										
							1,065,520	1,816,240	2,841,520	
							@18%	@17%	@16%	
PLUS DIST. LOSSES (APPROX.)							233,480	571,760	541,480	
TOTAL	327	395	499	388	976	1,528	1,299,000	2,188,000	3,383,000	

ANNUAL LOAD FACTOR -

38.2%

25.6%

25.3%

PROGRAM ANALYST, OFFICE OF THE
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TABLE VI

ESTIMATE OF LOADS - SUMMARY OF POWER REQUIREMENTS
(BY CLASSIFICATION OF CONSUMERS)

FLORIDA 35 GRADES (REV.)									
TYPE OF CONSUMER	NUMBER OF CONSUMERS			KW DEMAND			ANNUAL KWH REQUIREMENTS		
	1954	1957	1962	1954	1957	1962	1954	1957	1962
FARM	709	844	1,075	614	848	1,317	1,914,300	2,785,200	4,515,000
SMALL COMMERCIAL	74	85	100	138	181	243	506,160	637,500	870,000
PUBLIC BUILDINGS	14	16	16	3	4	6	6,720	11,520	15,360
LARGE COMMERCIAL	16	16	16	493	521	621	1,271,800	1,399,000	1,799,400
LARGE COMMERCIAL (POTENTIAL)	12	32	45	341	1,305	1,756	277,500	1,455,000	1,772,500
U.S. SUGAR CORPORATION	1	1	1	1,325	1,825	2,700	3,250,000	4,320,000	6,210,000
SUB-TOTAL							7,226,480	10,608,220	15,182,260
PLUS DIST. LOSSES (APPROX.)							1,074,520	1,563,700	2,111,740
TOTAL	826	994	1,253	2,924	4,684	6,643	8,301,000	12,172,000	17,294,000

PROGRAM ANALYST, OFFICE OF THE
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TABLE VII

ESTIMATE OF LOADS - SUMMARY OF POWER REQUIREMENTS
(BY SUBSTATIONS)

FLORIDA 35 GRADES (REV.)

SUBSTATION AREAS	NUMBER OF CONSUMERS			KW DEMAND			ANNUAL KWH REQUIREMENTS		
	1954	1957	1962	1954	1957	1962	1954	1957	1962
MOORE HAVEN	498	598	753	1,211	1,883	2,415	3,507,000	5,388,000	7,298,000
MOORE HAVEN *	1	1	1	1,325	1,825	2,700	3,495,000	4,596,000	6,613,000
LAKE ANNIE	327	395	499	388	976	1,528	1,299,000	2,188,000	3,383,000
TOTAL	826	994	1,253	2,924	4,684	6,643	8,301,000	12,172,000	17,294,000

* U.S.SUGAR CORPORATION (LOCATED ON TABLE IV).

ANNUAL LOAD FACTOR - 32.4%

29.6%

29.7%

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